

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A system for use in an electric submersible pumping system, comprising:

a motor protector having an outer housing, an internal shaft, a fluid separation section and a head section, the head section having an abrasives exclusion mechanism to reduce motor protector wear, the abrasives exclusion mechanism comprising a shaft seal raised above a floor of the head section by a seal body, a stationary shroud mounted to the seal body and extending above the shaft seal, and a rotatable shroud deployed above the stationary shroud and secured to the internal shaft.

2. (Canceled)
3. (Original) The system as recited in claim 1, wherein the abrasives exclusion mechanism comprises a drainage hole disposed through the outer housing at a lower end of the head section.
4. (Canceled)
5. (Canceled)
6. (Original) The system as recited in claim 1, wherein the head section comprises a fluid port disposed through a lower end floor of the head section, and the abrasives exclusion mechanism comprises a stand tube extending upwardly from the fluid port.
7. (Original) The system as recited in claim 6, wherein the stand tube comprises a barrier that prevents the entry of abrasives into the stand tube.

8. (Original) The system as recited in claim 1, wherein the internal shaft comprises an internal air vent passageway.
9. (Original) The system as recited in claim 1, wherein the internal shaft is supported by at least one keyless journal bearing.
10. (Original) The system as recited in claim 1, wherein the motor protector further comprises a valve, the valve being inwardly oriented to relieve excessive negative pressure within the motor protector.
11. (Original) The system as recited in claim 1, wherein the motor protector further comprises a bag section, the bag section having a fiber-reinforced polymer bag.
12. (Currently amended) A pumping system, comprising:
 - a submersible pump;
 - a submersible motor to power the submersible pump; and
 - a motor protector fluidically coupled to the submersible motor, the motor protector having a head section with a head section keyless journal bearing and an abrasives exclusion mechanism to reduce the amount of abrasive material contacting the head section bearing.
13. (Original) The system as recited in claim 12, wherein the motor protector is disposed between the submersible pump and the submersible motor.
14. (Canceled)
15. (Original) The system as recited in claim 12, wherein the head section comprises an internal chamber into which a drive shaft extends.

16. (Original) The system as recited in claim 15, wherein the abrasives exclusion mechanism comprises a shaft seal located about the drive shaft at an elevated position within the internal chamber.
17. (Original) The system as recited in claim 14, wherein the abrasives exclusion mechanism comprises a shroud disposed over the shaft seal.
18. (Original) The system as recited in claim 15, wherein the abrasives exclusion mechanism comprises a drainage hole disposed through the outer housing at a lower end of the head section.
19. (Original) The system as recited in claim 15, wherein the motor protector further comprises a labyrinth section and a bag section.
20. (Original) The system as recited in claim 15, wherein the head section comprises a fluid port that extends to a lower motor protector section, the fluid port being coupled to a stand tube extending into the internal chamber.
21. (Original) The system as recited in claim 12, wherein the motor protector further comprises a valve, the valve being inwardly oriented to relieve excessive negative pressure within the motor protector.
22. (Original) The system as recited in claim 19, wherein the bag section has a fiber-reinforced polymer bag.
23. (Currently amended) A method of improving the performance of a motor protector used in abrasive conditions, comprising:
 - rotatably mounting a shaft through a bearing and a shaft seal positioned within a motor protector housing;
 - providing a head section into which an upper end of the shaft extends; ~~and~~

protecting the bearing and the shaft seal from contact with sand entering the head section;

placing a fluid port through a lower portion of the head section to provide fluid communication between a head section chamber and a lower motor protector section;

locating a stand tube in the head section chamber and coupling the stand tube to the fluid port; and

bending the stand tube.

24. (Original) The method as recited in claim 23, wherein rotatably mounting comprises mounting the shaft in a pair of keyless bearings.
25. (Canceled)
26. (Original) The method as recited in claim 25, wherein protecting comprises mounting the shaft seal at an elevated position above the lower portion.
27. (Original) The method as recited in claim 25, wherein protecting comprises locating a stationary shroud within the head section chamber above the bearing.
28. (Original) The method as recited in claim 27, wherein protecting further comprises attaching a rotatable shroud to the shaft proximate the stationary shroud to create a centrifuge effect during operation.
29. (Original) The method as recited in claim 25, wherein protecting comprises forming at least one hole through the motor protector housing proximate the lower portion to provide a passageway for dispelling abrasives from the head section chamber.
30. (Canceled)
31. (Canceled)
32. (Canceled)

33. (Original) The method as recited in claim 31, further comprising placing a filter in the stand tube.
34. (Original) The method as recited in claim 31, further comprising creating a tortuous path along the stand tube.
35. (Original) The method as recited in claim 31, further comprising placing a cap above the stand tube.
36. (Original) The method as recited in claim 23, further comprising venting a gas through the shaft.
37. (Original) The method as recited in claim 23, further comprising positioning a relief valve to relieve excessive negative pressure within the motor protector.
38. (Currently amended) A pumping system, comprising:
- a submersible pump;
 - a submersible motor to power the submersible pump; and
 - a motor protector fluidically coupled to the submersible motor, the motor protector having a head section with a shaft seal and an abrasives exclusion mechanism to reduce the amount of abrasive material contacting the shaft seal, the abrasives exclusion mechanism comprising a stationary shroud extending above the shaft seal, and a rotatable shroud deployed above the stationary shroud and adjacent the stationary shroud, the rotatable shroud being secured to an internal shaft.
39. (Original) The system as recited in claim 38, wherein the abrasives exclusion mechanism comprises a head section journal bearing protected by the abrasives exclusion mechanism.

40. (Canceled)
41. (Original) The system as recited in claim 38, wherein the abrasives exclusion mechanism comprises a drainage hole disposed through the outer housing at a lower end of the head section.
42. (Original) The system as recited in claim 38, wherein the head section comprises a fluid port that extends to a lower motor protector section, the fluid port being coupled to a stand tube extending into the internal chamber.
43. (Original) The system as recited in claim 38, wherein the motor protector further comprises a valve, the valve being inwardly oriented to relieve excessive negative pressure within the motor protector.
44. (Currently amended) A system for improving the performance of a motor protector used in abrasive conditions, comprising:
 means for rotatably mounting a shaft in a bearing positioned within a motor protector housing;
 means for providing a head section chamber and into which a shaft extends; and
 means for protecting the bearing by which the shaft is rotatably supported, the means for protecting comprising a shaft seal raised above a floor of the head section chamber and at least one drain hole formed through an outer housing of the motor protector proximate the floor of the head section chamber.
45. (Original) The system as recited in claim 44, wherein the means for rotatably mounting comprises a keyless journal bearing.
46. (Original) The system as recited in claim 44, wherein the means for providing comprises a head section formed within an outer motor protector housing.

47. (Original) The system as recited in claim 44, wherein the means for protecting comprises a sand diverter mechanism to prevent sand from contacting the bearing.